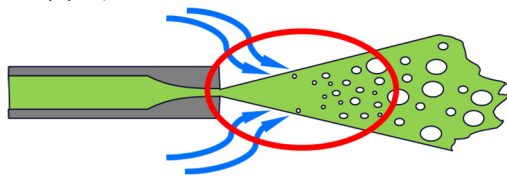
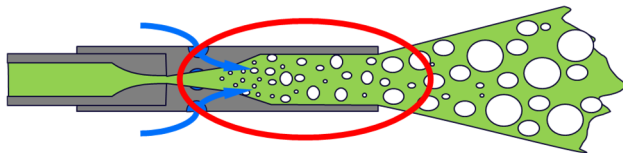


TI 039 - Dr. STHAMER Class A Foam Concentrates for CAFS and Micro-CAFS Devices

Foam is a dispersion of air in a liquid (e.g. water) stabilized by surfactants or other foaming chemicals. Mixing the gas with the liquid can be done in several different ways. The most common methods to date are either to eject the liquid into the ambient air under pressure (e.g. non-aspirated branch pipes, monitors, ...) or to use suitable foam forming nozzles (e.g. aspirating branch pipes):



Non-aspirating branch pipe: foam is created by the shear force between the liquid jet and the ambient air → expansion and foam quality are mostly not controllable

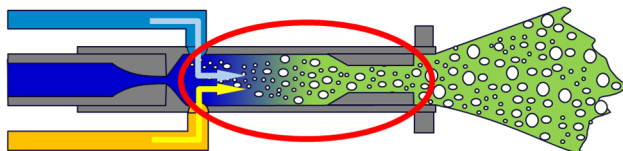


Aspirating branch pipe: induction of air into the liquid jet in a basic mixing tube with volume of dispersed air being mainly controlled by the water pressure → expansion and foam quality can be controlled to some extent

With both techniques the generation of foam occurs by spontaneous shear of the liquid jet in the ambient air.

Compressed Air Foam System

The abbreviation CAFS stands for *compressed air foam system*. CAFS is a technique to generate foam by mixing the liquid media water and foam agent with compressed air in a closed mixing chamber and feed the (still pressurized) foam into the ejection device (typically a simple tube with a valve).



CAFS: liquid media and desired amount of compressed air are mixed in a mixing chamber → expansion and foam quality can be designed freely to the needs

The CAFS-Technology gives full control over all media streams (water, foam concentrate and air) individually,

hence delivers the maximum control of foam volume and –quality.

CAFS-foam can be designed to consist of extremely fine foam bubbles (almost like shaving cream) yielding a robust, well sticking, stiff and long lasting foam. Or it can be designed to the opposite, a more watery, more flowable foam having better cooling and wetting effect.

Benefits of compressed air foam over conventional foam:

Significant practical benefits of compressed air foam are:

- Easy handling of the fire hose due to considerably lower weight
- Reduced risk and strain on emergency personnel
- Increased projection range with the same proportion of water
- Reduced water usage
- Excellent adhesiveness of the foam
- Environmentally more friendly fire fighting and significantly reduced damage costs due to optimised foam quality.

Disadvantages:

- Higher complexity of equipment (measuring and controlling device, foam generator, air compressor) and logistics.
- Capacity constraints due to the use of air compressor

Infobox

Basically, the CAFS technology is not bound to certain properties of the foam concentrate beyond its foaming ability but rather works with all foam fire extinguishing agents. Hence, the choice of foam concentrate should be based on individual factors.

STHAMEX Class A – foams for CAFS / MicroCAFS installations

Dr. STHAMER firefighting foam concentrates for class A fires - STHAMEX-Class A 0.5% F-15 #9071 and STHAMEX-Class A Classic 1% F-15 #9144 – are particularly suitable for use with CAFS installations:

- Fluorine - und Silicone free¹, 100 % biodegradable
- Excellent foaming

¹ We define fluorine-free products as being manufactured without the intentional addition of fluoro-organic compounds for the purpose of improving performance in such a way that they do not

contain any PFAS in excess of the ubiquitous regional background contamination (e.g. in the drinking water used for manufacture).

Technical Information

- Faster penetration of the surface of solids than common foams, thus providing excellent cooling and extinguishing effects.
- Suitable for Class A- and –B-fires (type tested²)

If filled and stored following the recommendations, CAF systems using STHAMEX Class A foam concentrates are stable for a minimum storage period of 12 months.

Preparation of the CAFS unit

It is critical to ensure that the system is clean and devoid of any foam destructive substances or adhesions.

New installation

Prior to the initial filling, we recommend flushing a new CAFS unit once with soft potable or distilled water and again using a foam solution. This should be prepared from the foam concentrate and water quality intended for use in the system. The concentration of the foam solution should be as recommended for direct proportioning³.

Refilling

Before refilling, in-use CAFS installations should be flushed thoroughly with soft potable or distilled water and following several times using a foam solution prepared from the foam concentrate and water quality intended for use in the system. The concentration of the foam solution should be as recommended for direct proportioning².

Water quality

For system flushing and preparing of foam solutions with STHAMEX-class A foam concentrates we re-recommend using soft potable or, ideally distilled water.

Proportioning

For instant use:

For instant use STHAMEX-class A foam concentrates should be proportioned according to our recommendations:

- STHAMEX-Class A 0.5% F-15 #9071:
0.5 vol.% of foam concentrate are mixed with 99.5 vol.% of water

- STHAMEX-Class A Classic 1% F-15 #9144:
1 vol.% of foam concentrate are mixed with 99 vol.% of water

Please note that such foam solutions are not designed for longer storage periods and will remain usable for a few weeks at best.

For storage and later use:

For storage of the foam solution (Premix) up to 12 months, the chosen dosage of foam concentrate should be higher than indicated for direct proportioning in order to defer the slight degradation that always occurs.

We recommend the following proportioning rates:

- STHAMEX-Class A 0.5% F-15 #9071:
1.5 vol.% of foam concentrate are mixed with 98.5 vol.% of water
- STHAMEX-class A Classic 1% F-15 #9144
3 vol.% of foam concentrate are mixed with 97 vol.% of water

With the recommended dosage in water of the aforementioned quality, filling into clean, residue-free rinsed devices and clean work the filled CAFS units are stable for a storage period of at least 12 months.

Disclaimer

All content of this technical information sheet corresponds to our current and best knowledge at the time of issue of this information sheet. We reserve the right to adapt the information given here to newer findings. Please contact us for the latest version.

² STHAMEX-class A foam concentrates were independently tested acc. to EN 1568/3 for gentle application on nonpolar fuels.

³ E.g. for STHAMEX-class A 0.5% F-15 #9071, 0.5 vol.% of the concentrate are mixed with 99.5 vol.% of water to obtain a flushing solution.

				
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